The Office of Environment, Safety and Health and its Office of Nuclear and Facility Safety (NFS) publishes the Operating Experience Weekly Summary to promote safety throughout the Department of Energy (DOE) complex by encouraging feedback of operating experience and encouraging the exchange of information among DOE nuclear facilities.

The Weekly Summary should be processed as an external source of lessons-learned information as described in DOE-STD-7501-96, *Development of DOE Lessons Learned Programs*.

To issue the Weekly Summary in a timely manner, the Office of Operating Experience Analysis and Feedback (OEAF) relies on preliminary information such as daily operations reports, notification reports, and, time permitting, conversations with cognizant facility or DOE field office staff. If you have additional pertinent information or identify inaccurate statements in the summary, please bring this to the attention of Dick Trevillian, 301-903-3074, or Internet address dick.trevillian@hq.doe.gov, so we may issue a correction.

Internet addresses provided in the Weekly Summary will be formatted as lower-case alphabetical characters. Numerical characters will be specifically defined when used in Internet addresses. The Internet Uniform Resource Locator (URL) for the Weekly Summary is http://www.tis.eh.doe.gov/web/oeaf/oe_weekly/oe_weekly.html. The Weekly Summary, with word search capability, is also available on the OEAF home page at http://tis.eh.doe.gov/web/oeaf. If you experience difficulties accessing the Weekly Summary at these URLs, please contact Mark Mortensen at 208-525-3753 for assistance.

Readers are cautioned that review of the Weekly Summary should not be a substitute for a thorough review of the interim and final occurrence reports.

Operating Experience Weekly Summary 97-05

January 24 through January 31, 1997

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EVENTS

1. EXHAUST FANS TAKEN OUT OF SERVICE WITHOUT AN APPROVED WORK PACKAGE

On January 20, 1997, at Hanford, a design engineer shut down the exhaust fans for a contaminated building to verify as-built schematic drawings without using an approved work package. He entered the building with a field engineer, an electrician, and a radiological control technician. After verification, the engineer restarted the exhaust fans. The radiological control technician surveyed the individuals as they left the building, and no contamination was detected. Other workers in the building determined there was a problem when they observed the building exhaust fans had shut down unexpectedly. As a precautionary measure, an area superintendent directed a radiological control technician to take building air samples and a gross area smear in the change room. Results indicated there was no spread of contamination. The area superintendent temporarily suspended work at the building. Failure to obtain approval and follow procedural requirements created the potential for personnel contamination and the spread of contamination. (ORPS Report RL--BHI-DND-1997-0002)

The building is part of the REDOX Complex that was shut down in 1967. Investigators discovered the building has no formal authorization basis, but contains approximately 1,400 grams of plutonium throughout the building. Investigators determined the contractor is developing an authorization basis for the building and that building decontamination and decommissioning is scheduled to begin in the fall of 1997. Investigators also determined two different area superintendents control and approve work in the REDOX Complex. The design engineer did not go to either area superintendent for authorization.

An area superintendent convened a fact-finding meeting. He found the work was not covered by any existing work package and the design engineer did not inform the radiological controls engineer, health physics supervisor, or the plant operations supervisor of the outage. The design engineer was unfamiliar with the operating system in the Redox Complex. The area superintendent directed the following corrective actions.

- Only one area superintendent will be responsible for approving work packages.
- The operations manager will conduct a daily planning meeting to discuss all work in the REDOX Complex.
- Access control to the REDOX Complex will be restricted. Personnel entry will be approved by the area superintendent.

NFS recently reported work performed without approved work packages in Weekly Summaries 96-47 and 96-29.

- Weekly Summary 96-47 reported that on November 13, 1996, at the Hanford Analytical Laboratory, a subcontractor diesel mechanic removed a run-hour meter from an operating diesel, causing the diesel and a diesel-operated exhaust fan to stop. The mechanic performed the work without authorization or an approved work package. (ORPS Report RL--PHMC-ANALLAB-1996-0004)

- Weekly Summary 96-29 reported that on July 10, 1996, at the Rocky Flats Environmental Technical Site, a contractor engineer and an off-site vendor performed adjustments to a supply fan controller without a work control package or procedures and without the knowledge of building managers. (ORPS Report RFO--KHLL-SOLIDWST-1996-0095)

Operating Experience Analysis and Feedback engineers reviewed the Occurrence Reporting and Processing System database for work performed without approved work packages and found 157 events. Only 30 of these events were directly related to work performed without approved work packages. The major contributors to the direct causes for these events were personnel problems and management problems. The major causal factors for personnel problems were procedure not used or used incorrectly, inattention to detail, and communication problems. Major contributors to the management problems category included work planning, inadequate administrative control, and inadequate supervision.

This event illustrates the need for workers to be accountable and consider the consequences of performing unauthorized work. Working without approved work packages and authorization places personnel, environment, and equipment at risk. DOE 4330.4B, *Maintenance Management Program*, chapter 15, "Management Involvement," identifies the degree of management involvement in oversight and approval of maintenance and testing activities. The Order provides a definition of maintenance management and describes the types of work that should be controlled. DOE-STD-1039-93, *Guide to Good Practices for Control of Equipment and System Status*, section 4.2, "Equipment and System Alignment," states that operations personnel should be aware of the alignment of systems and equipment within their area at all times, including during maintenance.

KEYWORDS: work planning, work procedure, procedure

FUNCTIONAL AREAS: work planning, procedure

2. INADEQUATE FREEZE PROTECTION RESULTS IN DISRUPTED FACILITY OPERATIONS

Operating Experience Analysis and Feedback engineers reviewed three occurrence reports this week where equipment damage disrupted facility operations because of inadequate freeze protection measures. One occurrence involved the shut down of a dissolver used for plutonium processing. The other occurrences involved damage to fire system piping used for building fire protection. Damage caused by freezing water pipes can be costly to facility operations and in most cases is avoidable. (ORPS Reports SR--WSRC-FCAN-1997-0001, ORO--LMES-Y12SITE-1997-0002, and RFO--KHLL-NONPUOPS2-1997-0001)

On January 17, 1997, at the Savannah River Site, a frozen impulse line for a steam reducing station prevented steam flow to a stack jet. This resulted in actuation of an off-gas low flow interlock for a dissolver. F-Canyon operators immediately shut down the dissolver as required. The interlock ensures adequate off-gas flow and is an operational safety requirement. Investigators learned that a tarpaulin used to cover the reducing station for freeze protection had been removed. Corrective actions included insulating the impulse line, replacing the tarpaulin, and recording it as part of the freeze protection program.

On January 14, 1997, at Rocky Flats Environmental Technology Site, fire fighters responded to a fire suppression system flow alarm and found water leaking from fire system piping and domestic water lines in a building. The pipes froze as a result of sub-zero ambient temperatures. Approximately 7,000 gallons of water leaked before fire fighters and maintenance personnel isolated the piping. The shift superintendent activated the Emergency Operations Center because of concerns about electrical hazards. The piping systems are located above steel dropped ceilings and run near a concrete roof. Although the areas are heated, investigators believe the location of the pipes makes it difficult to heat them during extremely cold ambient temperatures.

On January 13, 1997, at Oak Ridge Y-12 Site, water froze and damaged a fire protection sprinkler system in a building containing a paint shop. Fire protection personnel assessed the damage and found that 10 cast-iron pipe fittings (elbows and tees) had cracked. They isolated the sprinkler system for repairs. There was no water damage to the facility. The only other damage was a cracked (frozen) pipe fitting on an emergency eyebath. Investigators found an outside door adjacent to the damaged area unlocked and standing open. Temperatures at the site were as low as -12.8 degrees Celsius (8.9 degrees Fahrenheit). Utilities and maintenance personnel raised the heating system setpoint in the building.

NFS recently reported freeze protection events in Weekly Summaries 96-52, 96-38, 96-06, 96-03, 95-50, and 95-38. Weekly Summary 96-52 described a similar event at the Rocky Flats Environmental Technology Site. On December 19, 1996, fire fighters responding to a fire suppression flow alarm, discovered a heavy flow of water on the second floor of a building leaking into a plutonium storage vault on the first floor. The fire fighters found a broken tee in a fire system pipe. The shift superintendent activated the Emergency Operations Center because of concerns about criticality safety and the structural integrity of the building. Investigators determined that increased building exhaust fan speeds, used to overcome differential pressure difficulties, increased the flow of cold air to the pipe tee. (ORPS Report RFO--KHLL-SOLIDWST-1996-0166)

These events highlight the impact that inadequate freeze protection measures can place on facility operations. Frozen systems have caused (1) shutdown of process equipment; (2) damage to piping systems required for facility safety; (3) containment, cleanup, and processing of water from leaks; and (3) activation of the Emergency Operations Centers. These events resulted in lost production time, unnecessary equipment repairs, challenges to safety systems, and costly cleanup.

Facility managers should review the freeze protection program requirements prescribed in DOE 4330.4B, *Maintenance Management Program*. Chapter II, section 19, “Seasonal Facility Preservation Requirements,” states: “A program should be in place to prevent equipment and building damage due to cold weather at any nuclear facility that may be at risk.” Section 19.1.3 provides guidelines for freeze protection plans for nuclear facilities. The Office of Environment, Safety, and Health issued DOE/EH-0213 Bulletin 91-4, *Cold Weather Protection*, in October 1991. In September 1995, Assistant Secretary for Environmental Management Safety Action Letter 95-01, “Freeze Protection,” was issued. Both of these documents can be obtained by contacting the Info Center, (301) 903-0449, or by writing to ES&H Information Center, U.S. Department of Energy, EH-74, Suite 100, Century XXI, Third Floor, Germantown, MD 20874.

KEYWORDS: freeze protection, fire protection

FUNCTIONAL AREAS: operations, fire protection

3. DEMOLITION PLAN DIRECTED CUTTING OF POTENTIALLY ENERGIZED CONDUIT

On January 22, 1997, at the Hanford T-Plant Facility, a subcontractor foreman performing work on an electrical upgrade project reported a violation to the T-Plant Facility lock and tag administrator. The violation occurred on January 16, 1997, when workers cut and removed a conduit and wires to an operational exhaust fan. The approved demolition plan for an old motor control center incorrectly identified the conduit for removal. The work should have been performed with a lock and tag for personnel protection. Cutting wires that are potentially energized is a shock hazard and could have serious consequences. (ORPS Report RL--PHMC-TPLANT-1997-0001)

The demolition plan included removal of an old conduit at a ceiling junction box serving the exhaust fan. The foreman verified that all new electrical supplies to the ceiling box were secured at the new power panel and the exhaust fan controller before starting the conduit removal. Workers then removed a section of conduit from the ceiling junction box to an existing floor penetration. On January 22, 1997, operators applied a lock and tag to the new power panel for circuits supplying the ceiling box. This allowed workers to enter the box and remove the stubbed nipples for the conduit. When the workers opened the box, they discovered that the conduit they had removed 6 days earlier was connected to the load side of the new panel.

Investigators determined that electricians used the old conduit to connect a new service to the exhaust fan through the ceiling box. The foreman and workers were unaware of this. Planners incorrectly identified the old conduit for removal. The work plan called for cutting four conduits, but only three should have been cut. Investigators also learned that a zero energy check had not been performed on the conduits. Although the check would not have indicated power because circuit breakers were open, investigators believe that opening the panel would have shown the lines connected to a power source.

The T-Plant operations manager directed subcontractors to perform zero energy checks before cutting any wires or conduits that have the potential for being energized. He also required a detailed review by T-Plant operators of any work being performed downstream of energized power panels or motor control centers before the subcontractor commences work.

NFS reported electrical safety incidents in 28 Weekly Summaries during 1996. These events included incorrectly identified equipment and the use of improper drawings for work planning. Also, failures in many areas contributed to these events. These included failure to (1) field-verify drawings, (2) identify electrical hazards, (3) follow electrical safety guidelines, (4) correctly label wiring or conductors, (5) properly identify all power sources, (6) follow procedures, (7) provide proper oversight of work activities, (8) properly review and question work being planned and conducted, and (9) perform self-checks.

Weekly Summary 96-41 reported that on October 3, 1996, at the Idaho Chemical Processing Plant, construction electricians were exposed to an electrical shock hazard because the wrong breaker was identified in their work package. When the electricians went to install a lock and tag on an exhaust blower, they discovered the breaker listed in the work package was labeled “spare.” An engineer told them that the label was incorrect and to proceed with the installation. The electricians opened the breaker, performed a zero energy check, and found the circuit was still energized. The protective equipment the

electricians wore was the last barrier to prevent injury. (ORPS Report ID--LITC-WASTEMNGT-1996-0013)

This event illustrates the need for work planners to ensure that plans accurately describe the work activity and correctly identify equipment or components. DOE-STD-1050-93, *Guideline to Good Practices for Planning, Scheduling and Coordination of Maintenance at DOE Nuclear Facilities,* section 3.1.1.3, provides the key elements of an effective planning program. Included is guidance recommending that experienced individuals should conduct thorough reviews of work plans to eliminate any errors or confusion. Managers at DOE facilities should review their programs to ensure that planners, craftsmen, and engineers understand their responsibilities and obligations.

KEYWORDS: electrical, shock hazard, work planning

FUNCTIONAL AREAS: electrical maintenance, construction, work planning

4. CONTRACTORS FAIL TO WEAR PROPER PERSONAL PROTECTIVE EQUIPMENT

On January 28, 1997, at the Waste Stream Correction Project at Los Alamos National Laboratory (LANL), a facility manager reported that subcontractor pipefitters conducted core drilling operations wearing Class O gloves instead of the Class 2 gloves (rated for 17,000 volts) required by the Activity Hazard Analysis. The Activity Hazard Analysis also required the workers to wear dielectric boots in wet environments. A Laboratory construction inspector saw the pipefitters performing a core drilling operation without the rated gloves and stopped work until the proper gloves were obtained. He also determined pipefitters had completed a similar core drilling operation in another technical area without the rated gloves or boots. Failure to use the correct personal protective equipment could have resulted in a worker fatality or injury. (ORPS Report ALO-LA-LANL-BOP-1997-0001 and ALO-LA-LANL-FIRNGHELAB-1997-0001)

Investigators learned that the pipefitters told the Laboratory inspector that their tool shop issued the Class O gloves before work started on January 18, 1997. The pipefitters and their foreman stated they were unaware of the differences between Class O and Class 2 gloves and did not know how to obtain Class 2 gloves. Investigators also determined that Class 2 gloves are not normally issued by the subcontractor's tool shop and must be obtained from linemen in the Utilities Group. The pipefitters also stated they did not recall training on electrical safety gloves before beginning work. The pipefitters and their foreman did not request, and were not issued, the required dielectric boots for the core drilling operation in the second technical area. Investigators determined that the pipefitters had signed a form stating they read the Activity Hazard Analysis, met the training and medical requirements, and agreed to abide by all the instructions and guidelines.

On January 22, 1997, the subcontractor manager held a meeting to discuss the event and determine corrective actions. The subcontractor manager directed tool shop personnel to issue complete packages of protective equipment, including Class 2 gloves, dielectric boots, and rubber mats to personnel requesting core-drilling equipment. The Laboratory manager is continuing to investigate to determine the root and contributing causes of this event. He plans to develop corrective actions when the investigation is completed.

On January 17, 1996, a mason tender at LANL received a severe electrical shock that resulted in serious burns and cardiac arrest. The mason tender was excavating in a building basement when the jackhammer he was operating contacted an energized 13.2-kV electrical cable. A Type A Accident Investigation Board identified seven root causes for the accident, including a determination that management systems were not effective in correcting long-standing, well-defined programmatic weaknesses identified by past internal and external assessments, occurrences, and accident investigations or in translating lessons learned into safe day-to-day operations. (Weekly Summaries 96-04 and 96-05; Type A Accident Investigation Board Report on the January 17, 1996, Electrical Accident with Injury in Building 209, Technical Area 21 Los Alamos National Laboratory; ORPS Report ALO-LA-LANL-TSF-1996-0001)

The Board also determined the following.

- LANL did not develop laboratory-wide procedures that define work planning and control requirements within all organizations and establish performance expectations for subcontractors.

- LANL and contractor management systems did not ensure that policies and procedural requirements were met and that individuals were held accountable for poor safety performance.

- Laboratory and contractor operating procedures and formal training programs do not effectively implement lessons learned from previous electrical incidents.

- Facility line managers are not involved in planning and executing work tasks.

As a result of this event, LANL management proposed the following corrective actions.

- Subcontractor management will ensure the appropriate personal protective equipment is available and used by their personnel.

- LANL management will develop and complete an electric safety program.

- LANL management will evaluate the effectiveness of the subcontractor training programs through observation and measurements.

NFS recently reported in Weekly Summaries 96-51 and 96-47 events where workers did not use personal protective equipment.

- Weekly Summary 96-51 reported that on December 5, 1996, at Sandia National Laboratory, a technician at the Explosives Component Facility received an electrical shock when his right hand came close to a high-voltage bank of capacitors. The network contained 14 capacitors connected in parallel creating a 4,200-volt potential. The discharge path through his body was from the bottom of his right wrist to his elbow at the point where it was in contact with the grounded metal chassis. (ORPS Report ALO-KO-SNL-14000-1996-0004)

- Weekly Summary 96-47 reported that on November 14, 1996, at the Savannah River Site facility managers at Central Services Works Engineering issued a stand-down order to a subcontractor following two events involving safety procedure violations. The order prohibited the

subcontractor from performing any work on site until its personnel have been retrained on the site safety manual. (ORPS Report SR--WSRC-CSWE-1996-0010)

Operating Experience Analysis and Feedback engineers reviewed the Occurrence Reporting and Processing System database for events where personal protective equipment was not used and found 122 events. Of the 122 events, 57 were directly related to personal protective equipment not being used. Facility managers reported management problems, personnel problems, and procedure problems as contributing to the direct cause of these events. Inattention to detail, procedure not used correctly, and communication problems were reported as major causal factors for the personnel error category. Using a defective or inadequate procedure was reported as a causal factor in the procedure category.

DOE-STD-1051-93, *Guideline To Good Practices For Maintenance Organization and Administration at DOE Nuclear Facilities*, section 2.3.8, states that non-facility personnel should be indoctrinated in and adhere to plant polices and procedures to the same degree as Maintenance Division personnel. Section 2.3.9, further states that Maintenance Division managers should not acquiesce to outside organizations to the extent that their primary responsibility, personnel safety, and plant safety and reliability are compromised. DOE 4330.4B, *Maintenance Management Program*, section 3.1.1, states that contracted maintenance services must be controlled and overseen to ensure that contracted work is performed to the same standard as established for the maintenance organization. Contract personnel must be qualified for the work they perform. Facility managers should ensure that when non-facility workers perform maintenance they are familiar with plant policies and procedures and qualified to do the work.

KEYWORDS: electrical safety, personal protective equipment, work control

FUNCTIONAL AREAS: construction, industrial safety, operating experience/lessons learned

5. OPERATORS WITH EXPIRED TRAINING PERFORM WASTE HANDLING ACTIVITIES

On January 23, 1997, at the Savannah River Site FB-Line, a waste generating custodial officer discovered that the annual Resource Conservation and Recovery Act (RCRA) training for six waste-handling operators had expired. While conducting an internal audit of RCRA training qualifications, the officer found the operators had performed RCRA-related waste- handling activities after their annual training expired on November 30, 1996. The qualifications matrix used at the time of the event did not track the qualification expiration dates. Expired training can lead to a decrease in worker proficiency and knowledge and may result in an adverse impact on the environment and on the safety of personnel. (ORPS Report SR--WSRC-FBLINE-1997-0006)

The custodial officer determined a qualified RCRA operator was present in each case where operators with expired training handled RCRA waste. The officer also performed an assessment of operator knowledge pertaining to RCRA and found that all six operators demonstrated acceptable knowledge.

The training coordinator updated the training matrix to reflect the current status of operator qualifications. The coordinator also updated the qualifications matrix to track RCRA-

qualification expiration dates. The facility manager removed the affected operators from tasks that required the training. The Westinghouse Savannah River Company Environmental Protection Department will report this occurrence to the South Carolina Department of Health and Environmental Concerns.

A similar event occurred at the FB-Line on March 10, 1995, when delays in providing annual refresher training resulted in personnel with lapsed training performing waste activities. A corrective action from that event was to modify the operator qualification matrix with an "R" code to indicate the RCRA training status for FB-Line operators. This allowed shift managers to verify that an operator was RCRA-qualified, but it did not provide a method to determine if the qualifications had expired.

NFS reported training issues in Weekly Summaries 96-50, 96-49, 96-48, 96-46, 96-44, 95-31, 95-17, and 95-13.

- On December 6, 1996, at the Pantex Plant, during a review of personnel qualification/certification records, Manufacturing Division personnel identified a production technician who had performed work without being fully qualified. The technician had completed all required job-specific training, but lacked courses on general work practices required by plant procedures. Certification of assigned workers is part of the authorization basis. Investigators determined the cause was miscommunication between the operations coordinator and operations manager about the technician's qualifications. An interim corrective action required supervisors to check employee certification and qualification daily. (Weekly Summary 96-50; ORPS Report ALO-AO-MHSM-PANTEX-1996-0236)

- On July 24, 1995, at the Hanford Plant, a shift manager worked as part of a minimum-shift crew with an expired certification. Operational safety requirements specified certification of shift personnel before they could be part of a minimum-shift crew. Investigators found that certifications had expired or would have expired by August 2, 1995, for 50 percent of the shift managers. DOE granted a 90-day extension to allow re-certification of the shift managers. Corrective actions included (1) revising the training matrix system to include a re-certification report with a code for required certification classes and (2) providing a status report that will identify recertification training needs 60 days before expiration. (Weekly Summary 95-31; ORPS Report RL--WHC-PFP-1995-0040)

Operating Experience Analysis and Feedback engineers searched the Occurrence Reporting and Processing System database for occurrences where personnel training, qualifications, or certifications had expired. The search found 13 occurrences reported DOE-wide. Eight of these reports were for RCRA activities, including six from Savannah River and two from Rocky Flats. No training or insufficient refresher training contributed to 41 percent of the direct causes for these events as coded by facility managers.

This event illustrates the need for training coordinators and facility managers to review their training program records and controls to ensure that staff are qualified and certified for the tasks to which they are assigned. Employees should also accept the responsibility for meeting qualification requirements. Record tracking records should be used to identify training expiration dates so that retraining can be scheduled. Supervisors should be able to easily track progress of both entry-level and re-qualification participants.

DOE 5480.20, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities,* states that the purpose of the Order is to assure that all persons are qualified to carry out their assigned responsibilities. Chapter I, section 7.a.(1) and 7.a.(2) provide requirements for developing and maintaining training to meet the position requirements. Training department personnel also need to rigorously apply the principles and requirements of a systematic approach to training, such as performance-based training, as defined in chapter I.7.b of the Order. This chapter provides a discussion of elements that contribute to a successful program for initial and continuing training. Requirements for initial and continuing training can be found in chapters I.7.c and I.7.d.

KEYWORDS: training and qualifications, certification, waste handling, record keeping

FUNCTIONAL AREAS: training and qualifications, licensing/compliance

PRICE ANDERSON AMENDMENTS ACT (PAAA) INFORMATION

1. NONCOMPLIANCE WITH RADIOLOGICAL PROTECTION TRAINING REQUIREMENTS

This week the Office of Environment, Safety and Health Office of Enforcement and Investigations, forwarded information to OEAF engineers about a number of contractors that have reported similar radiological protection and qualification deficiencies into the Noncompliance Tracking System. This information identified contractor deficiencies in meeting training and qualification requirements of 10 CFR Part 835, *Occupational Radiation Protection Radiation Safety Training*. Part 835 requires training and periodic retraining in (1) general radiation safety for all workers, (2) fundamentals of radiation protection and as low as reasonably achievable for all radiological workers, and (3) fundamentals of radiation protection, and procedures for maintaining exposures as low as reasonably achievable for radiological control technicians. Retraining is generally required at 2-year intervals. Enforcement action can be taken if DOE identifies radiological protection training deficiencies and the contractor does not respond in a timely manner.

Noncompliance Tracking System reports filed by contractors include the following.

- At Los Alamos National Laboratory, contractors reported that approximately 23 percent of employees needing Radiological Worker I training and 9 percent of those needing Radiological Worker II training had not received the required retraining.

- Following a comprehensive assessment at the Los Alamos TA-55 facility, a contractor reported that subcontractor radiological workers did not receive the training on procedures required to perform decontamination work.

- Contractors found radiological control technicians at Lawrence Berkeley Laboratory received training for normal, routine work but not the additional training required for non-routine work.

- At Fernald, contractors reported instructors inappropriately adjusted test scores for trained and qualified radiological control technicians. Certain

technicians were found to have failing scores on portions of the tests after the contractor corrected the adjusted scores.

- At Argonne National Laboratory—East, contractors reported all radiological workers were deficient in meeting part of their training or retraining requirements.

- At Lawrence Livermore Laboratory, contractors reported that 49 percent of the 700 radiological workers were not current in the required retraining.

Contractors reported several reasons for these deficiencies in the Noncompliance Tracking System. They identified inadequate processes to track the receipt of training and to identify when retraining was required. A supervisor's memory was relied on in some cases. In one case, a computer database contained the necessary data, but was not reviewed to confirm training requirements. In another case, training requirements were on one computer database; training records were on another; and the two systems did not interface to confirm training requirements were met.

Corrective actions taken by contractors include (1) designating a central control point to monitor training records against requirements, (2) using computer databases to track training status, (3) providing periodic training status reports to supervisors, (4) notifying both personnel and their supervisors when required training is due, and (5) identifying personnel who are not "qualified" to perform certain tasks because of a lapse in training.

DOE issued an Enforcement Letter for some of these deficiencies, but deferred final enforcement action until completion of corrective actions. For cases that have been reviewed and closed, contractors took appropriate compensatory actions, such as removing personnel from performing radiological work until required training occurred or providing additional qualified personnel to supervise work. Both the timely identification of deficiencies related to personnel who had not met training requirements and implementation of improved administrative controls were important considerations for enforcement in these cases. Because of the similarity of noncompliances among several contractors, the Office of Enforcement and Investigation suggested that contractors review the current administrative controls. The intent of these controls is to ensure radiological workers and radiological control technicians have received the required training and retraining.

The Price-Anderson Amendments Act subjects DOE contractors to civil penalties for violations of DOE rules, regulations, and compliance orders relating to nuclear safety requirements. The Office of Enforcement and Investigation may reduce a base civil penalty by up to 100 percent when a DOE contractor promptly identifies a violation, reports it to DOE, and undertakes timely corrective action. Additionally, the enforcement policy allows DOE discretion to chose not to issue a notice of violation in certain cases. The Noncompliance Tracking System (Weekly Summaries 95-17, 95-20) allows contractors to promptly report potential noncompliances and take advantage of these mitigation provisions in the enforcement policy.

KEYWORDS: ALARA, Price-Anderson Act, radiation protection

FUNCTIONAL AREAS: radiation protection

NOTICES UNDER DEVELOPMENT

The Office of Nuclear and Facility Safety encourages input related to the development of Notices. If you have any questions, comments, or information concerning events or issues similar to the following, please contact Mr. Dick Trevillian, Office of Nuclear and Facility Safety at (301) 903-3074 or at Internet address dick.trevillian@hq.doe.gov.

OEAF is currently developing Safety Notices on the following issues:

1. Water Hammer